Debunking2020: A handbook of recommendations for correcting or preventing misinformation in public discourse

Preregistration of methodology for document preparation
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Debunking2020 aims to be a consensually-developed document authored by leading researchers in the field of the behavior and cognition of misinformation and its debunking. It seeks to build on the *Debunking Handbook,* authored by John Cook and Stephan Lewandowsky in 2011 (http://sks.to/debunk), which is no longer current.

This document is intended to preregister the process for creating *Debunking2020*. Our approach is, in part, inspired by a paper by Rosenfeld et al. (2015)[1] describing a process for consensus formation in a medical/clinical context. Our approach is also informed by precedents in psychology; for example, Kassin and colleagues et al. (2001)[2], who established an expert consensus for the psychology of eyewitness testimony.

1. Authors

Authorship will follow a two-tiered model adapted from the Intergovernmental Panel on Climate Change (IPCC), with coordinating lead authors (CLA) and contributing authors (CA).

The CLAs are:
Stephan Lewandowsky, Ullrich K. H. Ecker, and John Cook.

The CAs are:
Dolores Albarracin, Michelle Amazeen, Cornelia Betsch, Panayiota Kendeou, David Lazer, Doug Lombardi, Eryn Newman, Gordon Pennycook, Ethan Porter, David Rand, David Rapp, Jason Reifler, Jon Roozenbeek, Philipp Schmid, Colleen Seifert, Gale Sinatra, Briony Swire-Thompson, Sander van der Linden, Emily Vraga, Thomas Wood, and Maria Zaragoza.

The CAs were selected as follows. The CLAs collected names of potential contributing authors in the following manner: (a) Scopus was searched for papers published from 2015 onwards (15 May 2020) using these keys: (misinformation OR disinformation OR "fake news" OR misconceptions OR myths OR "false information") AND (debunking OR corrections OR refutations OR retractions OR inoculation OR prebunking OR fact-checking OR "fact checking" OR backfire OR "belief updating" OR "knowledge revision" OR "belief echoes" OR backlash). All subject areas were excluded except psychology, social sciences, arts and humanities, and "multidisciplinary." From the resulting list of published authors, researchers with only 1

[1] Rosenfeld, R. M., Nnacheta, L. C., & Corrigan, M. D. (2015). Clinical consensus statement development manual. *Otolaryngology—Head and Neck Surgery*, *153*(2_suppl), S1-S14.
[2] Kassin, S. M., Tubb, V. A., Hosch, H. M., & Memon, A. (2001). On the" general acceptance" of eyewitness testimony research: A new survey of the experts. *American Psychologist*, *56*(5), 405.

publication and individuals who were known to be inactive were excluded. (b) CLAs also independently generated other candidate names. These steps yielded a preliminary list of 33 names. (c) This list was then discussed among CLAs and 5 more names were excluded because they had either published only theoretical papers, or only preprints, or none (candidates with no publications could only result from step (b)). The remaining 28 individuals were invited to participate in the project, and those who accepted joined the team as contributing authors.

The roles of CLAs and CAs are specified below. Our goal is to distribute workload equitably among CAs, while also clearly recognizing that the CLAs carry a greater workload. One implication of our desire for equity among CAs is that we would have to drop a CA if they were found to be entirely unresponsive during the process outlined below. We consider this unlikely, but please note that being listed in this document alone does not constitute an entitlement to authorship.

2. Target audience of *Debunking2020*

Following on from the *Debunking Handbook*, the target audience is broad-ranging, including journalists, scientists, policy makers, legislators, educators, students, and members of the general public.

3. Scope of *Debunking2020*

The goal of *Debunking2020* is to provide a usable practice guide situated within the present technological and political/regulatory context. This goal necessarily limits the scope to cognitive and behavioral measures that are actionable now (rather than, for example, proposing redesigned social media platforms). In addition, our goal is to provide context by acknowledging how our guide sits within the “attention economy,” and addressing the power of social media platforms (and how that power could be exploited by changing platform architecture and policy overnight with greater consequences than any debunking guide can ever achieve).

The precise scope will be defined by the production process outlined next.

4. Process and approximate timeline

The following step-by-step process will be followed to generate the document

a. All CLAs and CAs complete disclosure statements, detailing funding and potential conflicts of interest (e.g., consultancies, sponsorships, grants). This step is conducted simultaneously with step b. Authors will also be asked (following Kassin et al., 2001) whether they have provided advice or testimony to governments or similar organizations (e.g., WHO, E.U.), whether they have provided testimony in court, and whether they have contributed to public media. The purpose of this inventory is to provide information

about the team's expertise outside the laboratory to inform future readers.

b. All CLAs and CAs *independently* nominate up to 10 issues (findings/phenomena) that they think must be mentioned in *Debunking2020*, and up to 5 recommendations (for practitioners) that should be made in the document. Nominations will take place through Google Forms or similar.

   Findings and recommendations will be nominated by authors by writing brief paragraphs (~50 words), accompanied by ~3 key references.

   Authors will be asked to identify whether they consider nominated findings to have emerged from their own work (e.g., tick box to identify "I've published research supporting/relevant to this issue/recommendation" wherever that applies). Authors are encouraged to highlight work and to provide citations to work done by others in addition to their own research—although authors should feel free to draw on their own work where appropriate.

   Optionally, authors will also indicate for each nominated finding and recommendation whether it is specific to a domain. For example, some findings or recommendations may apply to rebutting science denial but not conspiracy theories, whereas others may be general.

Target date for a. and b.: 1 week after preregistration.

c. Authors then vote on the collection of issues and recommendations following Rosenfeld et al. (2015), using two principal dimensions (viz. *confidence* and *importance*). Voting will be done independently online using Google Forms or similar. We will adapt criteria[3] used for making evidence-based recommendations in education. These criteria involve the following categories for *confidence* (they have been slightly modified based upon discussion among LAs).

   The response scale for confidence will consist of these categories:

   Tier 1a – Replicated Evidence: supported by *multiple* well-designed and well-implemented randomized control experimental studies that are known to be replicable.

   Tier 1b – Strong Evidence: supported by one or more well-designed and well-implemented *randomized control experimental studies.*

   Tier 2 – Moderate Evidence: supported by one or more well-designed and well-implemented *quasi-experimental studies.*

[3] http://www2.ed.gov/policy/elsec/leg/essa/guidanceuseseinvestment.pdf

Tier 3 – Promising Evidence: supported by one or more well-designed and well-implemented *correlational studies.*

Tier 4 – Demonstrates a Rationale: practices that have a well-defined conceptual grounding, are supported by research, and have some effort underway to determine their effectiveness.

For *importance*, we will use a similar scale:

Tier 1 – Pivotal: finding is crucial to debunking.

Tier 2 – Important: finding is helpful to debunking.

Tier 3 – Worth considering: debunking may benefit from this finding.

Tier 4 – Not important: debunking is unaffected by this finding.

Votes will require brief justification (e.g., in a single-line textbox).

Target date for c: 3 weeks after preregistration.

d. CLAs postulate an upper limit on the number of distinct findings and recommendations that can be included based on their prior experience from other handbooks. CLAs then select the final list of issues for inclusion, based on importance and confidence ratings / votes from CAs.

Target date for d: 5 weeks after preregistration.

e. List compiled in d. is presented to the group together with the raw data from CAs from step c. for discussion (e.g., via Zoom conference) and, ultimately, approval.

Target date for e: 6-7 weeks after preregistration.

f. CLAs take responsibility for production of a first draft based on approved list, but may reach out to particular CAs to assist with specific sections.

Target date for completion of draft: 10 weeks after preregistration.

g. Draft is discussed by all authors via Google doc and, where feasible, Zoom conference(s).

h. Finalize.

Target date for completion: 12 weeks (3 months) from preregistration.